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Michael Lerche

POSITIONS HELD

05/2007– Carnegie Institution Washington, D.C.

Research Associate at the High Pressure Synergetic Center at the Advanced Photon Source

- Experiments under high pressures and high temperatures using Nuclear Resonant Scattering and Inelastic X-ray Scattering
- User support at various beam-lines of the APS

08/2004–05/2007 University of Illinois Urbana, IL

Research Associate, Post-Doc at the Advanced Photon Source

- Nuclear resonant scattering experiments under high pressures and high temperatures
- User support at beam-line 3-ID of the APS
- Purchase and commissioning of a bimorph Kirkpatrick-Baez mirror
- Implementation of a mar345 image plate detector into the experimental station to allow in situ diffraction experiments on samples under extreme conditions
- Organized Workshops
  - Nuclear Resonant Scattering on Earth Materials using Synchrotron Radiation, Argonne, Feb. 12-13, 2005
  - Evaluation of Synchrotron Mössbauer Spectroscopy Data using the CONUSS software, Argonne, Oct. 29-30, 2005
  - Workshop on Synergy of 21st Century High-Pressure Science and Technology, Argonne, Apr. 29-May 1, 2006 (local organizing committee)

08/2000-08/2004 Universität Hamburg Hamburg

Research Associate

- X-ray optics development
- User support at beam-line BW4 at HASYLAB
- Experiments with synchrotron radiation at ESRF (France), APS (U.S.A.) and SPring 8 (Japan).

EDUCATION

06/2000–08/2004 Universität Hamburg Hamburg

Ph. D. thesis

- Dissertation: Ein Fabry Pérot Interferometer für Röntgenstrahlung. (A Fabry Pérot interferometer for X-rays)

10/1990–05/2000 Universität Hamburg Hamburg

Diploma in Physics

- Diploma thesis: Untersuchung von Saphir-Einkristallen, Anwendungen in der Monochromatisierung und der exakten Bragg-Rückstreuung von Synchrotronstrahlung. (Investigation of sapphire single crystals, applications in the monochromatization and the exact Bragg backscattering of synchrotron radiation.)
- Reorganisation of beam-line F4 at HASYLAB to allow Synchrotron Mössbauer experiments.

CIVIL SERVICE

03/1989-10/1990 Deutsche Muskelschwundhilfe Hamburg

- Individual care of Muscular Dystrophy patients

RESEARCH INTERESTS

- Material properties under extreme conditions, as high pressure and high or low temperatures.
- Amorphous metals under high pressure conditions using nuclear resonant scattering and other x-ray spectroscopy techniques.
- X-ray optics, development of new equipment for experiments with synchrotron radiation.

LANGUAGE SKILLS

- German: native speaker
- English: written and oral
- French: basics

ADDITIONAL SKILLS

- Finite element analysis with ANSYS